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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/491,063	01/25/2000	Jane E. Polston	UF-232XC1	8057

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SALIWANCHIK LLOYD & SALIWANCHIK
A PROFESSIONAL ASSOCIATION
PO BOX 142950
GAINESVILLE, FL 32614-2950

EXAMINER	
GIBBS, TERRA C	

ART UNIT	PAPER NUMBER
1635	

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/491,063	POLSTON ET AL.	
	Examiner	Art Unit	
	Terra C. Gibbs	1635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of.this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 October 2002*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is a response to Applicants Amendment and Remarks filed October 15, 2002.

Claims 1, 3-13, and 15-21 have been canceled. New claims 22-42 have been added.

Claims 22-42 have been examined on the merits.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Drawings

In the previous Office Action mailed June 5, 2002, the Examiner objected the Drawings. In a telephonic conversation on June 28, 2002, the Examiner indicated that this objection was issued in error. Therefore, the objection to the Drawings is hereby withdrawn.

Claim Rejections - 35 USC § 112

In the previous Office Action mailed June 5, 2002, claims 1, 3-13, and 15-21 were rejected under 35 U.S.C. 112, first paragraph as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. **This rejection is moot** in view of Applicants amendment to cancel claims 1, 3-13, and 15-21.

Claim Rejections - 35 USC § 102

In the previous Office Action mailed June 5, 2002, claims 1, 3, 5, 6, 9, 10, 12, 13, 15, and 17-20 were rejected under 35 U.S.C. as being anticipated by Brunetti et al. (Molecular Plant-Microbe Interactions, 1997 Vol. 10:571-579). **This rejection is moot** in view of Applicants amendment to cancel claims 1, 3-13, and 15-21.

In the previous Office Action mailed June 5, 2002, claims 1, 3-13, and 15-21 were rejected under 35 U.S.C. 102(e) as being anticipated by Stout et al. [U.S. Patent No. 6,291,743]. **This rejection is moot** in view of Applicants amendment to cancel claims 1, 3-13, and 15-21.

Applicant's amendment necessitated the new ground(s) of rejection presented below:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 22-42 are rejected under 35 U.S.C. 102(e) as being anticipated by Stout et al. [U.S. Patent No. 6,291,743] ('743).

Claims 22-29 are drawn to a method for providing resistance to infection by a geminivirus plant virus in a plant or plant tissue, comprising transforming said plant or plant

tissue with a polynucleotide that comprises a nucleotide sequence that encodes a non-mutated Rep protein of a tomato mottle geminivirus. Claims 30-33, 37, and 38 are drawn to a transgenic plant or plant tissue having increased resistance to infection by a geminivirus plant virus, wherein said plant or plant tissue comprise a polynucleotide that comprises a nucleotide sequence that encodes a non-mutated Rep protein of a tomato mottle geminivirus. Claims 34-36 are drawn to a transgenic plant or plant tissue having increased resistance to infection by a geminivirus plant virus, wherein said transgenic plant is a hybrid made by crossing a transgenic plant comprising a polynucleotide that comprises a nucleotide sequence that encodes a non-mutated Rep protein of a tomato mottle geminivirus with a plant that does not comprise a polynucleotide that comprises a nucleotide sequence that encodes a non-mutated Rep protein of a tomato mottle geminivirus. Claims 39-42 are drawn to a cell, or progeny thereof, transformed with a polynucleotide that comprises a nucleotide sequence that encodes a non-mutated Rep protein of a tomato mottle geminivirus.

('743) disclose constructs used to create transgenic plants (see Table 1A, at RTSC, and Example 3.1 and 3.3). It is noted that the RTSC transgenic plant disclosed by Stout et al. comprises a polynucleotide that encodes the wild-type Rep protein of a tomato mottle geminivirus. This disclosure reads on claims 30-33, 37, and 38. It is further noted that column 4, lines 64-67 recite, "*In vitro* assays for transdominance correlates lethal mutations and transdominant activity in transient assays. This is exemplified in a BGMV-GA model system. These results are readily applicable to produce a transdominant C1 or AC1 ORFs from other geminiviruses. **Transgenic plants resistant to ToMoV were created by transforming them with an AC1 ORF derived from ToMoV** and engineered to contain similar mutations".

It is further noted that claims 30-33, 37, and 38 require that the plant or plant tissue have *increased resistance to infection by a geminivirus plant virus*. The RTSC transgenic plant which comprises a polynucleotide that encodes the wild-type Rep protein of a tomato mottle geminivirus, disclosed by Stout et al., would inherently have increased resistance to infection by a geminivirus plant virus, **absent evidence to the contrary**, since the RTSC transgenic plant meets all the structural limitations of the claims. Simply because the prior art does not say the RTSC transgenic plant has increased resistance to infection by a plant virus is not evidence it would not. It falls to applicant to show data or provide some line of sound scientific reasoning why the RTSC transgenic plant disclosed by Stout et al., which meets all the structural limitations of the claims, would also not possess the property of having increased resistance to infection, since per the claim, this is the only claimed structural requirement the transgenic plant need have. See MPEP 2112.01, "Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 562 F.2d at 1255, 195 USPQ at 433." See also MPEP 2112: "[T]he PTO can require an Applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [her] claimed product." The MPEP at 2112 citing *In re*

Fitzgerald 205 USPQ 594. 596, (CCPA 1980), quoting In re Best 195 USPQ 430 as per above. Therefore, it falls to Applicant to determine and provide evidence that the RTSC transgenic plant which comprises a polynucleotide that encodes the wild-type Rep protein of a tomato mottle geminivirus, disclosed by Stout et al., would or would not have increased resistance to infection by a geminivirus plant virus as claimed.

For further explanation, see MPEP 2112 [R-2]: Requirements of Rejection Based on Inherency; Burden of Proof:

The express, implicit, and inherent disclosures of a prior art reference may be relied upon in the rejection of claims under 35 U.S.C. 102 or 103. "The inherent teaching of a prior art reference, a question of fact, arises both in the context of anticipation and obviousness." In re Napier, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995) (affirmed a 35 U.S.C. 103 rejection based in part on inherent disclosure in one of the references). See also In re Grasselli, 713 F.2d 731, 739, 218 USPQ 769, 775 (Fed. Cir. 1983).

I. SOMETHING WHICH IS OLD DOES NOT BECOME PATENTABLE UPON THE DISCOVERY OF A NEW PROPERTY

"[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." Atlas Powder Co. v. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). See also MPEP § 2112.01 with regard to inherency and product-by-process claims and MPEP § 2141.02 with regard to inherency and rejections under 35 U.S.C. 103.

II. INHERENT FEATURE NEED NOT BE RECOGNIZED AT THE TIME OF THE INVENTION

There is no requirement that a person of ordinary skill in the art would have recognized

the inherent disclosure at the time of invention, but only that the subject matter is in fact inherent in the prior art reference. Schering Corp. v. Geneva Pharm. Inc., 339 F.3d 1373, 1377, 67 USPQ2d 1664, 1668 (Fed. Cir. 2003) (rejecting the contention that inherent anticipation requires recognition by a person of ordinary skill in the art before the critical date and allowing expert testimony with respect to post-critical date clinical trials to show inherency); see also Toro Co. v. Deere & Co., 355 F.3d 1313, 1320, 69 USPQ2d 1584, 1590 (Fed. Cir. 2004)("[T]he fact that a characteristic is a necessary feature or result of a prior-art embodiment (that is itself sufficiently described and enabled) is enough for inherent anticipation, even if that fact was unknown at the time of the prior invention."); Abbott Labs v. Geneva Pharms., Inc., 182 F.3d 1315, 1319, 51 USPQ2d 1307, 1310 (Fed.Cir.1999) ("If a product that is offered for sale inherently possesses each of the limitations of the claims, then the invention is on sale, whether or not the parties to the transaction recognize that the product possesses the claimed characteristics."); Atlas Powder Co. v. Ireco, Inc., 190 F.3d 1342, 1348-49 (Fed. Cir. 1999) ("Because sufficient aeration' was inherent in the prior art, it is irrelevant that the prior art did not recognize the key aspect of [the] invention.... An inherent structure, composition, or function is not necessarily known.").

It is noted that claims 22-29 require a method for providing resistance to infection by a geminivirus plant in a plant or plant tissue, comprising one step: transforming said plant or plant tissue with a polynucleotide that comprises a nucleotide sequence that encodes a non-mutated Rep protein of a tomato mottle geminivirus. Stout et al. explicitly teach this one step and therefore anticipate the claims.

Claims 34-36 are drawn to a transgenic plant or plant tissue having increased resistance to infection by a geminivirus plant virus, wherein said transgenic plant is a hybrid made by crossing a transgenic plant comprising a polynucleotide that comprises a nucleotide sequence that encodes a non-mutated Rep protein of a tomato mottle geminivirus with a plant that does not comprise a polynucleotide that comprises a nucleotide sequence that encodes a non-mutated Rep protein of a tomato mottle geminivirus. Stout et al. recite, "Geminivirus-resistant plants are incorporated into traditional breeding programs to develop elite breeding lines that include the

resistance-conferring transgene. These changes produce C1 or AC1 molecules when made alone or in combination with a mutant". This disclosure reads on claims 34-36.

Therefore, the RTSC transgenic plant which comprises a polynucleotide that encodes the wild-type Rep protein of a tomato mottle geminivirus disclosed by Stout et al. anticipates claims 22-42.

Response to Arguments

It is noted that in the previous Office Action mailed June 5, 2002, claims 1, 3-13, and 15-21 were rejected under 35 U.S.C. 102(e) as being anticipated by Stout et al. [U.S. Patent No. 6,291,743].

In response to this rejection, Applicants argue that Stout et al. do not teach or suggest the use of a polynucleotide encoding a non-mutated tomato mottle geminivirus Rep protein for providing virus resistance in transgenic plants. Applicants further argue that the although Stout et al. may teach the production of infectious clones and vectors where the gene is not mutated, Applicants assert that these vectors did not provide the plant with resistance to viral infection. Applicants argue that column 34 of the Stout et al. patent shows that only vectors that contained lethal mutations provided some level of virus resistance, whereas those constructs lacking mutations did not provide resistance.

Applicant's arguments have been fully considered but are not found persuasive. The Examiner does not agree that the Stout et al. patent teaches that constructs lacking mutations did not provide resistance. For example, Applicant points the Examiner to column 34 which states,

"The results show that non-lethal mutants do not exhibit detectable transdominant activity. While levels of transdominance varied among different AC1 mutants, only replication-lethal mutants exhibited transdominant interference. Levels of AC1 expression directly relate to levels of trans-dominance and replication (FIG. 1). Thus, AC1 expression, results in production of a protein that mediates the "trans"-effective suppression. That is, this protein likely binds to the CR region which mediates its suppressive effect by inhibiting the binding of the wildtype AC1 protein."

Column 34 discloses that, "non-lethal mutants do not exhibit detectable transdominant activity". Column 34 goes on to disclose that, "only replication-lethal mutants exhibited transdominant interference". Column 34 discusses "non-lethal mutants" and "replication-lethal mutants", but "mutants" nonetheless, and is silent regarding those constructs **lacking** mutations. Further, it appears that column 34 shows the results of a transient assay for trans-dominance using wild type and mutant AC1 from BGMV-FA in NT-1 cells. Since wild type and mutant AC1 disclosed in column 34 is from bean golden mosaic virus (BGMV) and not tomato mottle geminivirus, as recited in the instant claims, it is unclear how column 34 is relevant to the instant rejection.

Claims 22-29 are drawn to a method for providing resistance to infection by a geminivirus plant virus in a plant or plant tissue, comprising transforming said plant or plant tissue with a polynucleotide that comprises a nucleotide sequence that encodes a non-mutated Rep protein of a tomato mottle geminivirus. These claims recite one step, namely the transformation of a plant or plant tissue with a polynucleotide that comprises a nucleotide sequence that encodes a non-mutated Rep protein of a tomato mottle geminivirus. Stout et al. teach this one step at Table 1A, at ToMoV-AC1 (RTSC) and Example 3.3. Since Stout et al. explicitly teach this one step, the claims are anticipated.

In summary, because the RTSC transgenic plant disclosed by Stout et al. meets all the structural limitations of the claims, the RTSC transgenic plant has increased resistance to infection by a geminivirus plant virus, absent evidence to the contrary. Therefore, this the RTSC transgenic plant disclosed by Stout et al. anticipates claims 22-42 of the instant invention.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terra C. Gibbs whose telephone number is (571) 272-0758. The examiner can normally be reached on M-F 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John L. LeGuyader can be reached on (571) 272-0760. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tcg
December 16, 2004

JOHN L. LeGUYADER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600